

MERCURY AND MERCURY COMPOUNDS

MERCURY AND MERCURY COMPOUNDS

- PBT activity threshold:
 - 10 pounds for mercury
 - 10 pounds for mercury compounds
- Mercury compounds are present in crude oil, fuel oils, and coal
 - Combustion of fuels is expected to be the main source of mercury reporting
- Mercury may be present in mined ores

K-2

MERCURY AND MERCURY COMPOUNDS

- Manufacturing
 - Fuel combustion
 - Metal mining and beneficiation
 - Petroleum refining

K-3

MERCURY AND MERCURY COMPOUNDS

- Processing
 - Petroleum refineries and bulk petroleum stations
 - Coal mining and metal mining and beneficiation
 - Carbon black and coke production
 - Cement and clay products
 - Fabricated metal products
 - Electronic and electrical products (e.g., bulbs, switches, batteries)
 - Other products (e.g., thermometers)

K-4

MERCURY AND MERCURY COMPOUNDS

■ Otherwise use

- Chlor-alkali production
- Cement and clay products
- Fabricated metal products
- Electrical products (e.g., bulbs, switches, batteries)
- Other products (e.g., thermometers)

K-5

MERCURY AND MERCURY COMPOUNDS

■ Mercury concentrations in light bulbs (Ref. 3):

- Less than 40 milligrams per 4-foot fluorescent bulb
- 45–75 milligrams per high intensity discharge lamps
- 8–25 milligrams in sodium lamps

■ Use of bulbs - generally articles exempt

- Articles exemption negated if > 0.5 pounds of Section 313 chemical released (and not recycled) during reporting year from all like items

K-6

MERCURY AND MERCURY COMPOUNDS

■ Mercury concentrations in coal and other materials:

- Use the best readily available data. Usually, ICR data for your facility if available
- If ICR data for your facility not available, choices are:
 - » Develop an average from ICR data for the type of coal that your facility burns (e.g., Pennsylvania bituminous) (Ref. 5)
 - » EPA's *EPCRA Section 313 Industry Guidance: Electricity Generating Facilities* (Ref. 2)
 - » U.S. Geological Survey's (USGS) coal quality data base (Ref. 4)
 - » Other data

K-7

MERCURY AND MERCURY COMPOUNDS

■ Default concentrations in ash (Ref. 2):

- No. 6 Fuel oil ash: 1 ppm as Hg; 1.04 ppm as Hg₂O
- Coal fly ash: 12 ppm as Hg; 12.5 ppm as Hg₂O
- Coal bottom ash: 4.2 ppm as Hg; 4.37 ppm as Hg₂O

K-8

MERCURY AND MERCURY COMPOUNDS

■ Default air emission factors (Ref. 6):

- Fluorescent lamp manufacturing: 8 lbs./ton mercury (uncontrolled)
- Fluorescent lamp crushing: 1.9 lbs./billion lamps (fabric filter, carbon adsorber)
- Thermometer manufacturing: 18 lbs./ton mercury (uncontrolled)
- Coke production: 50 lbs./million ton coke (fabric filter, electrostatic precipitator (ESP))
- Lime manufacture: 3.0 lbs./million ton lime produced (natural gas-fed vertical kiln)
- Carbon black manufacture: 300 lbs./million ton carbon black (fabric filter)

K-9

MERCURY AND MERCURY COMPOUNDS

■ Default air emission factors (Ref. 7):

- Primary copper smelting: 78 lbs./million ton metal
- Steel mill - electric arc furnace: 72 lbs./million ton scrap feed
- Ferrous foundries: 348 lbs./million ton metal charged
- Glass manufacture: 100 lbs./million ton silica (particulate matter (PM) control)
- Brick manufacture, coal-fired: 96 lbs./million ton brick (uncontrolled)
- Industrial/hazardous waste incinerators: 5.4 lbs./thousand ton waste incinerated

K-10

MERCURY AND MERCURY COMPOUNDS

■ For more information:

1. *Guidance for Reporting Toxic Chemicals: Mercury and Mercury Compounds Category*. U.S. EPA, Office of Information Analysis and Access. August 2001. Available at <http://www.epa.gov/tri>
2. *EPCRA Section 313 Industry Guidance: Electricity Generating Facilities*. U.S. EPA, Office of Pollution Prevention and Toxics. 2000. Available at <http://www.epa.gov/tri>
3. *Mercury Study Report to Congress Volume II: An Inventory of Anthropogenic Mercury Emissions in the United States*. U.S. EPA, Office of Air Quality Planning and Standards and Office of Research and Development. 1997. Available at <http://www.epa.gov/ttn/atw/112nmerc/mercury.html>
4. *U.S. Geological Survey Coal Quality (Coalqual) Database: Version 2.0*. U.S. Geological Survey. 2000. Available at <http://energy.er.usgs.gov/products/databases/CoalQual/>
5. *Mercury ICR*. U.S. EPA, Unified Air Toxics Website. 2000. Available at <http://www.epa.gov/ttnuatw1/combust/utitox/utoxpg.html#DA2>
6. *Locating & Estimating Air Emissions from Sources of Mercury and Mercury Compounds*. U.S. EPA, Office of Air Quality Planning and Standards, 1997. Available at <http://www.epa.gov/ttn/chief/le/index.html>
7. *Emission Factor Database for Alternate Threshold Substances*. 2000. Available at http://www.ec.gc.ca/pdb/npri/npri_gdocs_e.cfm

K-11